

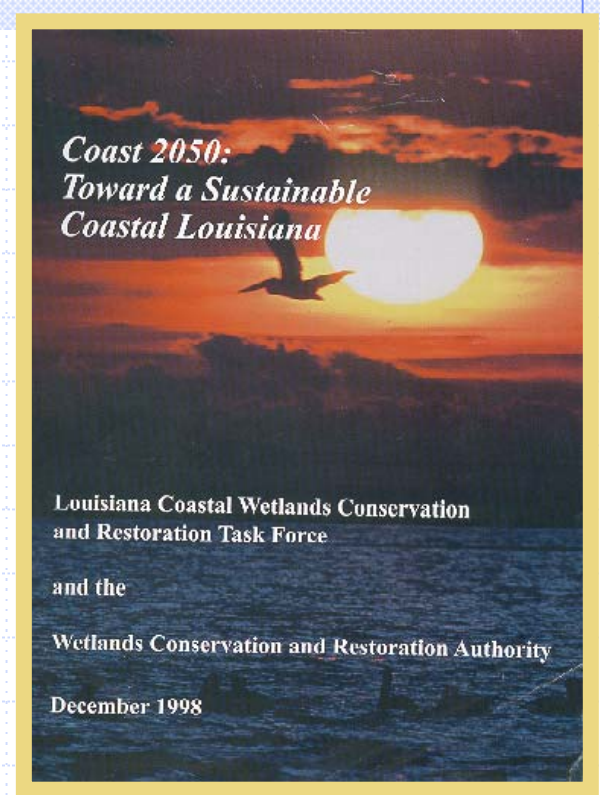
The Problem

- The swamps south of Lake Maurepas are dying.
- 80% of the canopy is comprised of Tupelo trees which are showing extreme stress.
- 50% of the swamp or 69,450 acres will be lost in 60 years.
- Most of the dying swamp will convert to open water over time.



Causes

- Subsidence: 1-2 feet per century
 - Permanent flooding
 - Sediment and nutrient starvation
 - Saltwater intrusion (salinity)
 - Drought conditions
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- The Mississippi River flood control levees have cut off most of the freshwater, sediment & nutrient input.
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- Tupelo trees are sensitive to salinity as low as 2 parts per thousand (ppt).



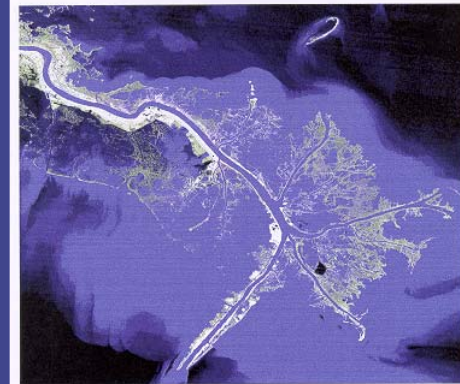
CWPPRA Actions – PPL9

- Both the Coast 2050 planning effort & the MRSNFR study identified diversions as the recommended strategy for addressing the problems in this area.
- Project selected as CWPPRA Priority Project List (PPL) 9 “Complex Project”

MISSISSIPPI RIVER SEDIMENT, NUTRIENT, AND
FRESHWATER REDISTRIBUTION STUDY

July 2000

DRAFT



Louisiana Coastal Wetlands
Conservation & Restoration
Task Force

US Army Corps
Of Engineers
New Orleans District



Objectives

- **Incorporate public input**
- **Gather data**
- **Evaluate & recommend a project to divert freshwater into the south Maurepas swamps**
- **Without causing flooding or impairing drainage**



Project Tasks & Results

3 Alternatives

Project Work Activities

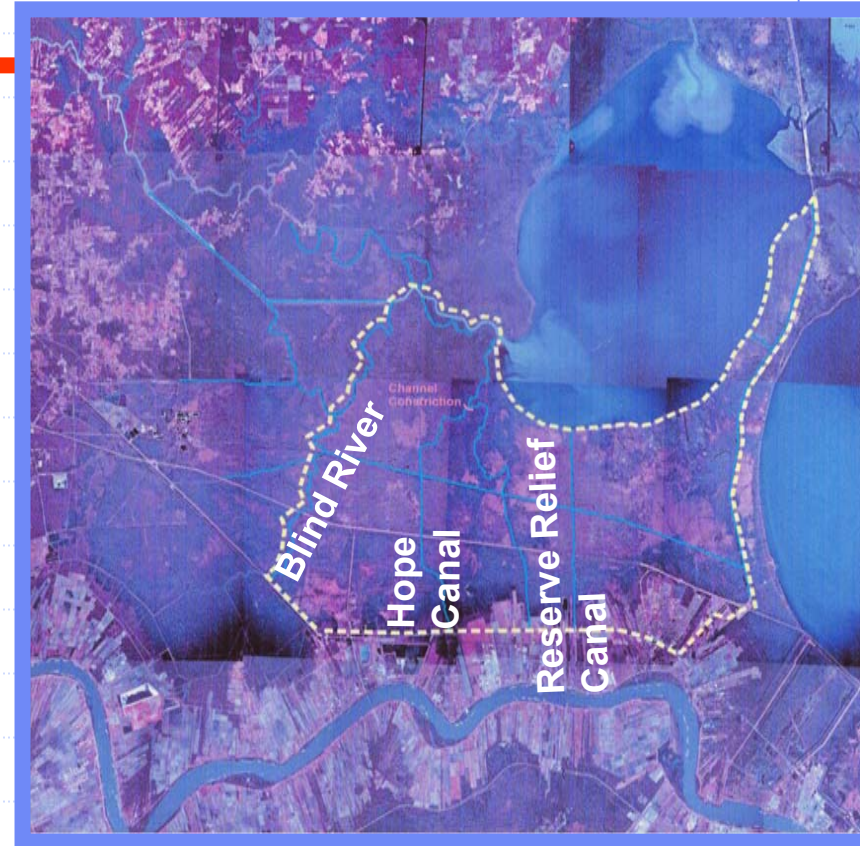
- Project Scoping & Coordination
- Preliminary Siting

- Data Gathering

- Hydrologic Modeling

- Project Evaluation,
Preliminary Design, & Cost

- Report



Project Results

Environmental data shows:

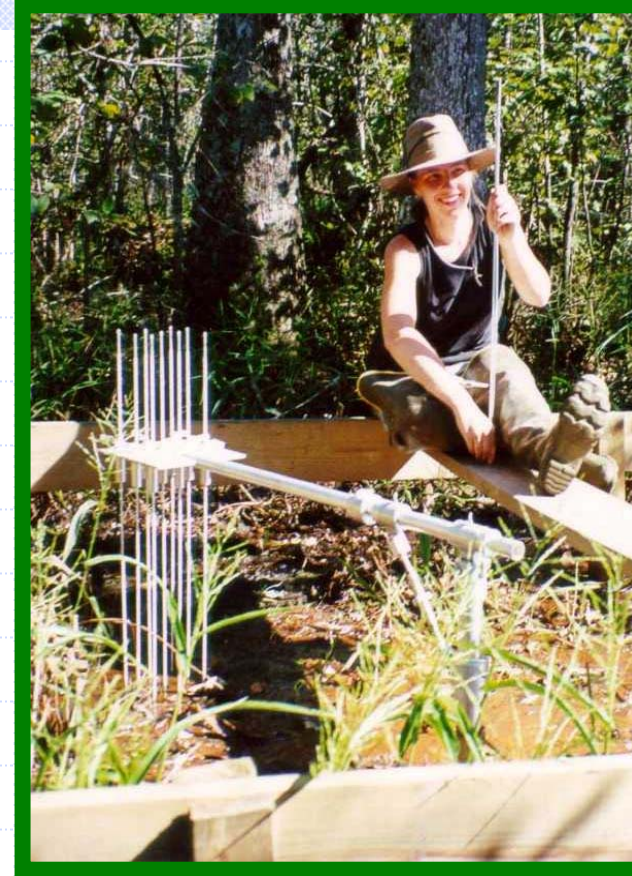
- **Soils poor for productivity**
- **Salinities get very high.**
- **Most of the swamp has low basal area, a measure of how many trees there are & how big they are.**
- **Cypress grew more than other trees, & most of the growth is in leaves & twigs rather than growing tree trunks.**
- **There are more tupelo trees than cypress trees.**
- **The drought had a negative effect on growth of vegetation.**



Project Results

Environmental data shows:

- **Sites where tree trunks grew most also had the lowest salinities**
- **Saltwater is killing trees along the lake, while flooding with poor quality water is killing trees in the swamp interior**
- **Additional nutrients could increase plant growth on the swamp floor by one-third, & could double growth of cypress seedlings.**

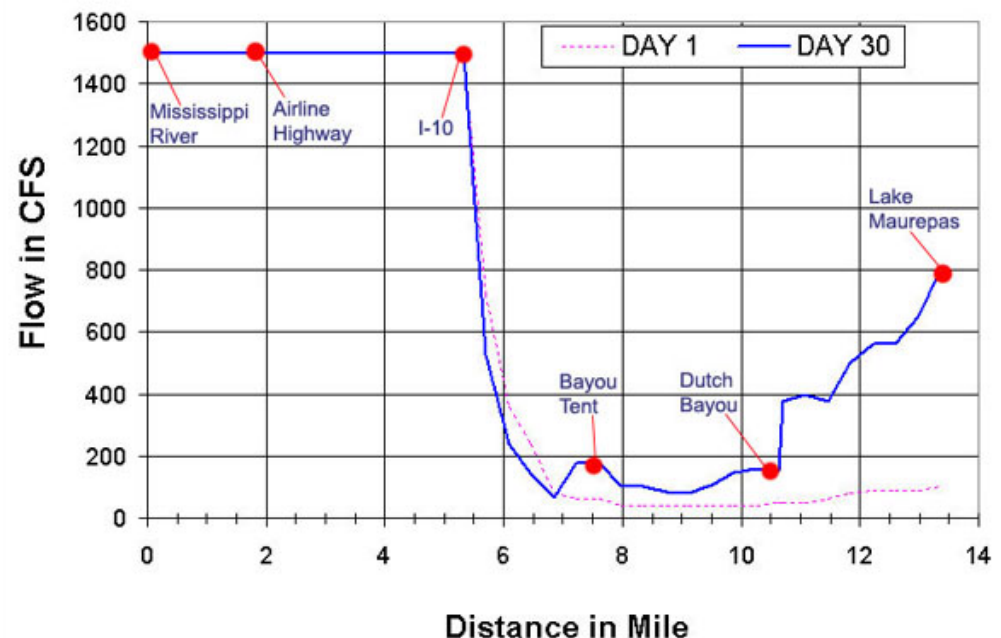


Project Results

Hydrologic modeling shows:

- Hope Canal will be improved to facilitate diversion, including construction of “guide” levees to move water north of I10 & ensure diverted water doesn't flow to developed areas
- Diversion passes through swamp & ends up in bayous & canals draining to Lake Maurepas

Flow Along Hope Canal, Bayou Tent and Dutch Bayou

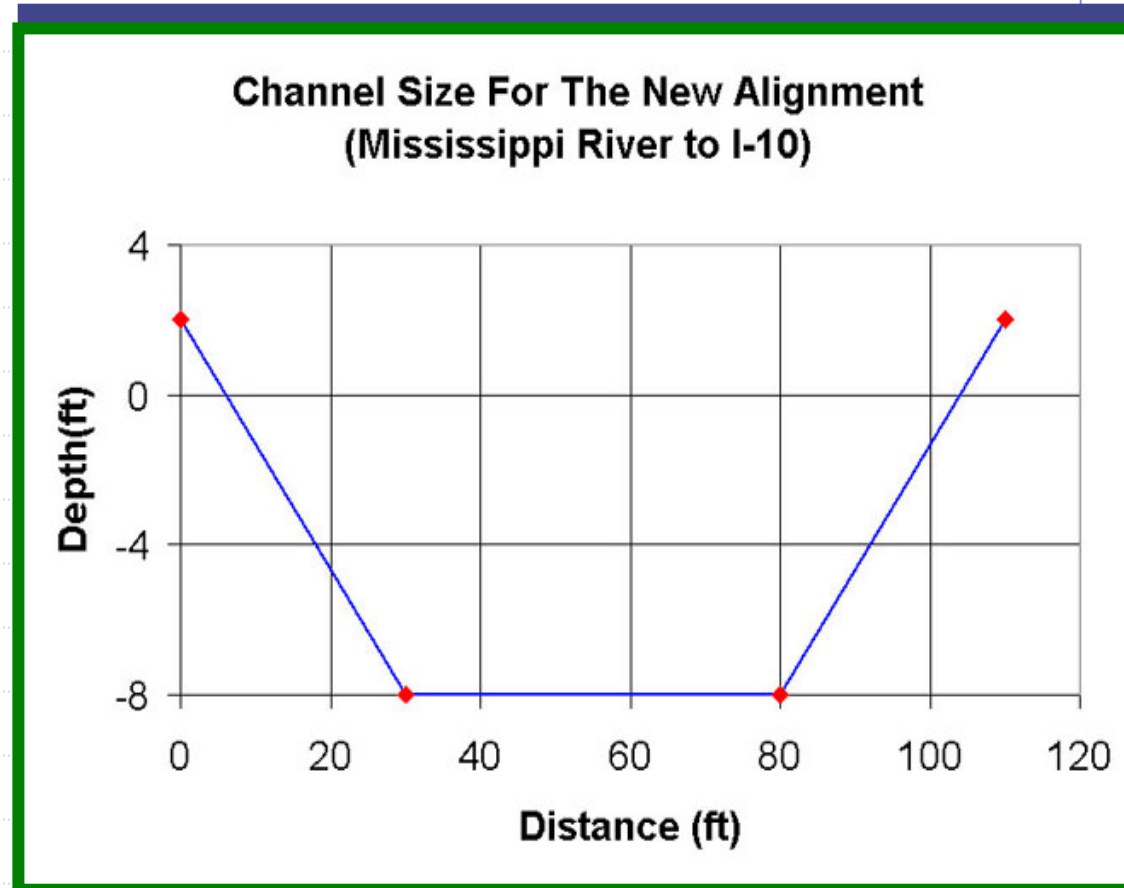


Project Results

Hydrologic modeling shows:

- Proposed channel size is:

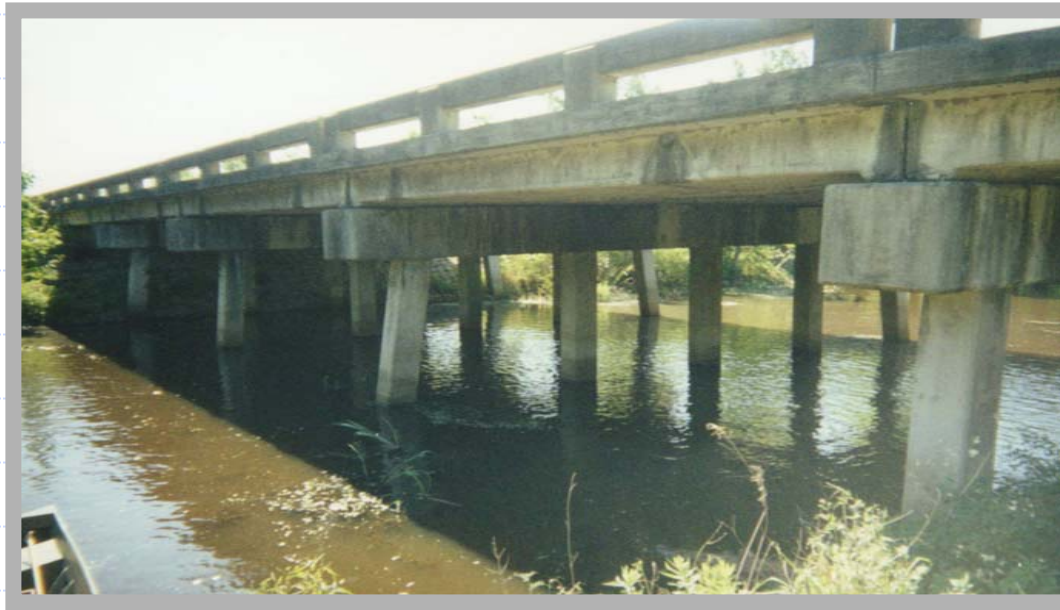
110 ft. top width,
50 ft. bottom width,
10 ft. depth
- Additional channel capacity required for diversion, could be used for drainage when diversion is off.



Project Results

Hydrologic modeling shows:

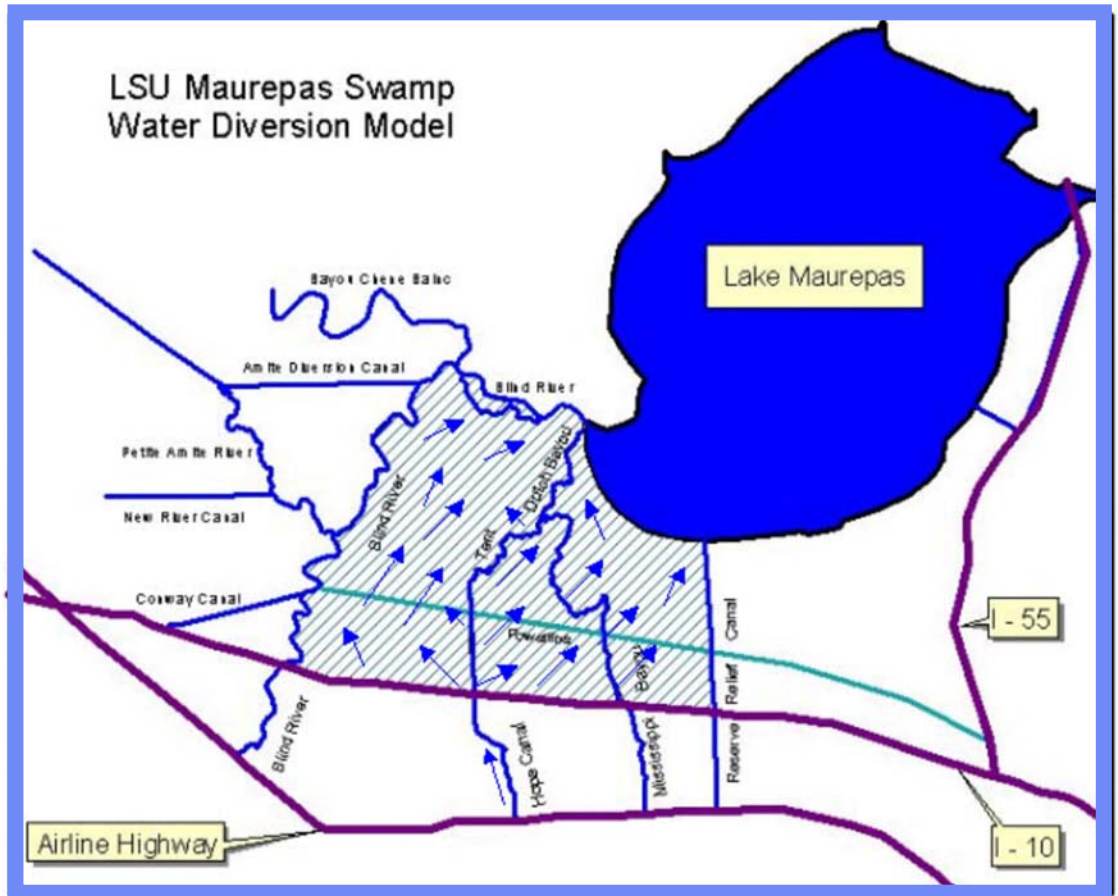
- 1,500 cfs of water can pass under the I10 bridge



- There are enough breaks in the levees along Hope Canal north of I10, & along other canals, bayous, & old railroad grades, that water will leave Hope Canal north of I10 & disperse throughout the swamp.

Project Results

Hydrologic modeling show



- **Boundaries:**
from Blind River &
the Amite River Diversion Channel
on the West & North,
to Reserve Relief Canal on the East.

Project Results

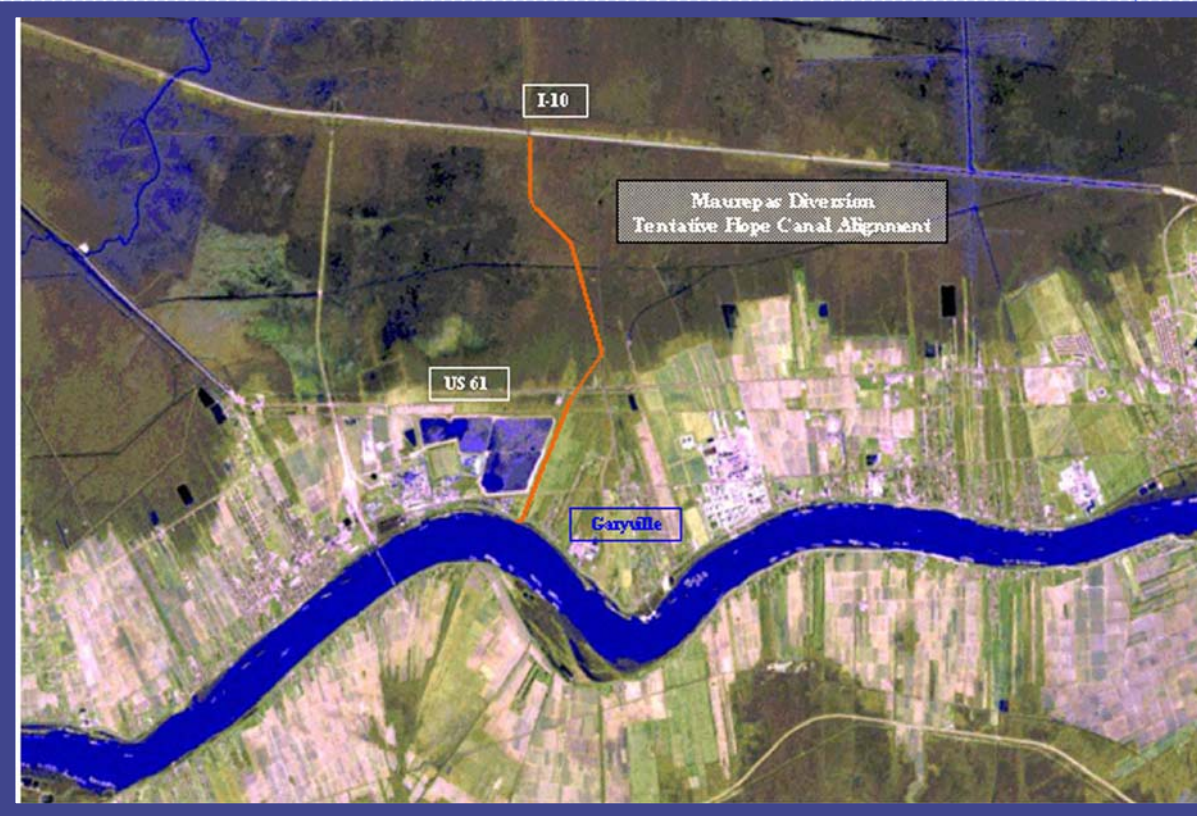
Hydrologic modeling shows:

- **A 1,500 cfs diversion would result in 1 ft. of water in the swamps near I10 & 6 inches of water in the swamps near the Blind River & Reserve Relief Canal**



Project Results

Alternatives analysis:



- **Upper Blind River not best alternative - river would carry so much water that little would reach the swamp.**
- **Hope Canal is best alternative based on potential to benefit swamps, ability to get water into swamps & reduced impacts to public & infrastructure.**

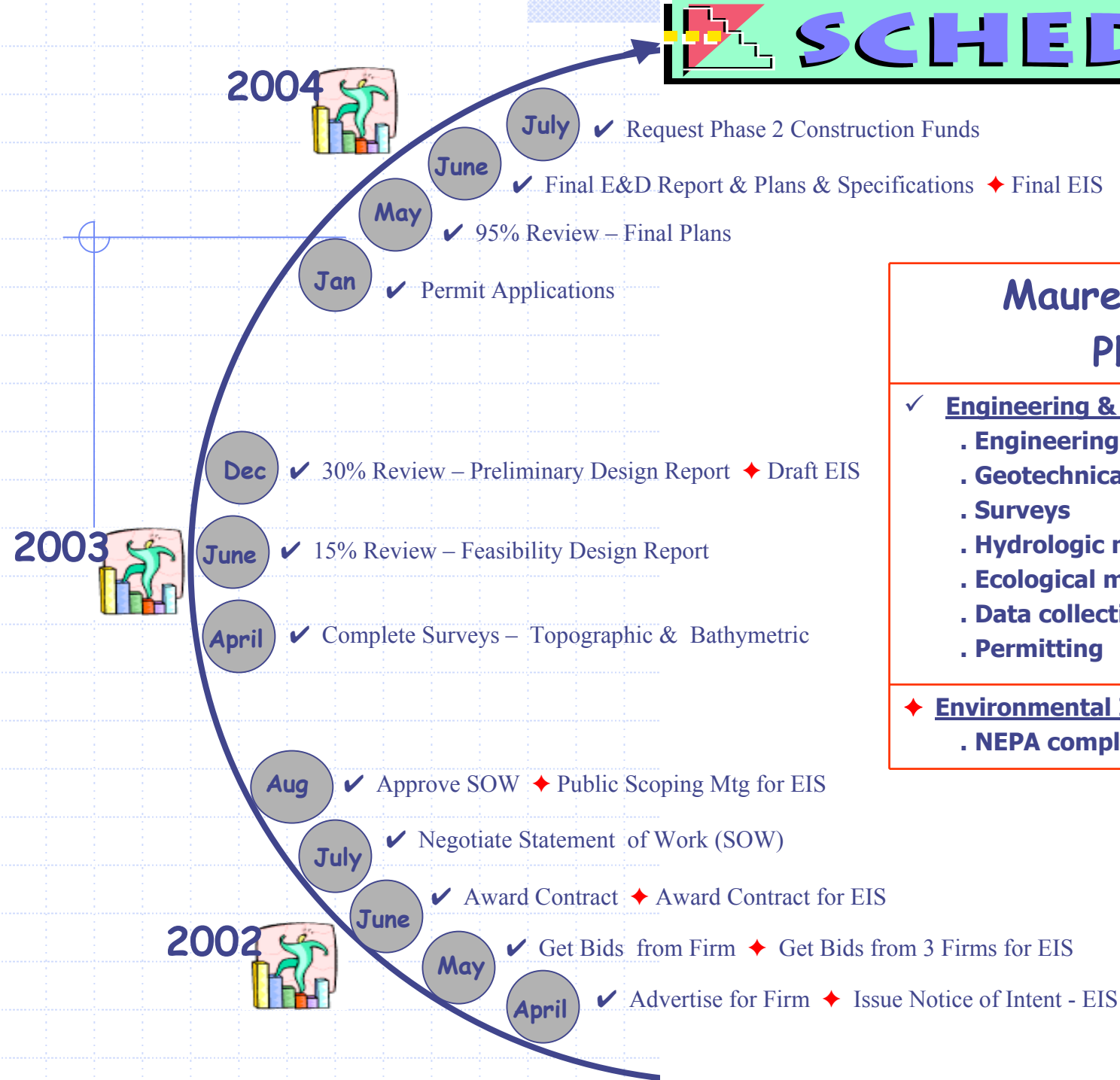
The Report

Diversion into the Maurepas Swamps

Complex Project
Coastal Wetlands
Planning, Protection, and
Restoration Act

<http://www.epa.gov/earth1r6/6wq/ecopro/em/cwppra/index.htm>
<http://www.savelawetlands.org/site/projects/po29/po29.html>

SCHEDULE



Maurepas Swamp Phase 1

- ✓ **Engineering & Design (E&D)**
 - . Engineering
 - . Geotechnical investigation
 - . Surveys
 - . Hydrologic modeling
 - . Ecological modeling
 - . Data collection
 - . Permitting
- ♦ **Environmental Impact Statement (EIS)**
 - . NEPA compliance